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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

05/26/2009

CLARENCE A GREEN PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06430 EXAMINER

DEAN, RAYMOND S

ART UNIT PAPER NUMBER

2618

DATE MAILED: 05/26/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/249.216	02/12/1999	JANNE LAAKSO	297-008493-U	9691

TITLE OF INVENTION: POWER CONTROL METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	08/26/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

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B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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maintenance fee notifications. Note: A certificate of mailing can only be used for domestic mailings of the CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address) Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission. 7590 05/26/2009 Certificate of Mailing or Transmission CLARENCE A GREEN I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below. PERMAN & GREEN 425 POST ROAD FAIRFIELD, CT 06430 (Depositor's name (Signature (Date APPLICATION NO. FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO. FILING DATE 09/249,216 02/12/1999 JANNE LAAKSO 297-008493-U 9691 TITLE OF INVENTION: POWER CONTROL METHOD APPLN. TYPE SMALL ENTITY ISSUE FEE DUE PUBLICATION FEE DUE PREV. PAID ISSUE FEE TOTAL FEE(S) DUE DATE DUE nonprovisional NO \$1510 \$0 \$0 \$1510 08/26/2009 **EXAMINER** ART UNIT CLASS-SUBCLASS DEAN, RAYMOND S 2618 455-522000 1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). 2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. or agents OR, alternatively, (2) the name of a single firm (having as a member a ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required. registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type) PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment. (A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY) 4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above) 4a. The following fee(s) are submitted: lssue Fee A check is enclosed. Publication Fee (No small entity discount permitted) Payment by credit card. Form PTO-2038 is attached. The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number ______ (enclose an extra copy of this fo Advance Order - # of Copies _ (enclose an extra copy of this form). 5. Change in Entity Status (from status indicated above) a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ■ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2). NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office. Authorized Signature Date Typed or printed name Registration No. This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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PERMAN & GREEN			ART UNIT	PAPER NUMBER
425 POST ROAD FAIRFIELD, CT 0	6430		2618 DATE MAILED: 05/26/2009	9

Determination of Patent Term Extension under 35 U.S.C. 154 (b)

(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 1777 day(s). Any patent to issue from the above-identified application will include an indication of the 1777 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

	Application No.	Applicant(s)	
	09/249,216	LAAKSO ET AL.	
Notice of Allowability	Examiner	Art Unit	
	RAYMOND S. DEAN	2618	
The MAILING DATE of this communication apperall claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIOF the Office or upon petition by the applicant. See 37 CFR 1.313 1. This communication is responsive to March 3, 2009.	(OR REMAINS) CLOSED in t or other appropriate commun GHTS. This application is sul	his application. If not included ication will be mailed in due course. Th	
2. X The allowed claim(s) is/are 2-10,12,13,15,19-25 and 27-32).		
 3. Acknowledgment is made of a claim for foreign priority unally All b) Some* c) None of the: 1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have International Bureau (PCT Rule 17.2(a)). * Certified copies not received: 	been received. been received in Application	No	he
Applicant has THREE MONTHS FROM THE "MAILING DATE" noted below. Failure to timely comply will result in ABANDONM THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.	IENT of this application.		
 A SUBSTITUTE OATH OR DECLARATION must be subm INFORMAL PATENT APPLICATION (PTO-152) which give 	es reason(s) why the oath or d		=
5. CORRECTED DRAWINGS (as "replacement sheets") mus			
(a) ☐ including changes required by the Notice of Draftspers	•	PTO-948) attached	
1) hereto or 2) to Paper No./Mail Date			
(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date			
Identifying indicia such as the application number (see 37 CFR 1 each sheet. Replacement sheet(s) should be labeled as such in the			
 DEPOSIT OF and/or INFORMATION about the depo- attached Examiner's comment regarding REQUIREMENT 			
Attachment(s)	5 □ Nation of late	was al Datanti Annil'ant'an	
 Notice of References Cited (PTO-892) Dotice of Draftperson's Patent Drawing Review (PTO-948) 		rmal Patent Application	
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 Examiner's Comment Regarding Requirement for Deposit of Biological Material 	8. ⊠ Examiner's S 9. ☐ Other	atement of Reasons for Allowance	

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 15 of Applicants' remarks filed March 3, 2009 with respect to the rejection of Claims 19 – 23, 25, 27, 30 – 32 have been fully considered and are persuasive. The rejection of Claims 19 – 23, 25, 27, 30 – 32 has been withdrawn.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Gamberdell (Reg. No. 44,695) on May 19, 2009.

Regarding Claim 19, Please remove the word "the" from in between the words "form" and "new" in line 10.

Regarding Claim 21, Please remove the word "the" from in between the words "form" and "new" in line 18. Please also change the word "or" to the word "of" in line 17.

Regarding Claim 22, Please remove the word "the" from in between the words "form" and "new" in lines 19 – 20.

Regarding Claim 23, Please remove the word "the" from in between the words "form" and "new" in lines 20 - 21.

Regarding Claim 25, Please remove the word "the" from in between the words "form" and "new" in line 17.

Regarding Claim 27, Please remove the word "the" from in between the words "form" and "new" in lines 20 - 21.

Regarding Claim 30, Please remove the word "the" from in between the words "form" and "new" in lines 18 - 19.

Regarding Claim 31, Please remove the word "the" from in between the words "form" and "new" in lines 18 - 19.

Regarding Claim 32, Please remove the word "the" from in between the words "form" and "new" in lines 19 – 20.

Please also change the dependency of Claim 12 from Claim 26 to Claim 25 (Please Note: The claim are going to be renumbered by Examiner).

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance:

The invention renders the following:

A power control method comprising: determining the transmit power of more than one bearer at a time in a mobile system having at least one mobile station and at least one base station by: forming a control function at least partly on the basis of a quantity which at least partly represents a fast fading experienced by at least one bearer,

calculating the control function in order to determine new output power values of said more than one bearer, generating an interference effect matrix which represents the mutual interference of different bearers, and <u>inverting the generated interference</u> <u>effect matrix in order to form new power levels</u>.

A power control method comprising: determining the transmit power of more than one bearer at a time in a mobile system having at least one mobile station and at least one base station by: forming a control function at least partly on the basis of a quantity which at least partly represents a fast fading experienced by at least one bearer, calculating the control function in order to determine new output power values of said more than one bearer, calculating more than one set of output power values, forming a utility function in order to select one set of output power values, selecting the set of output power values which minimizes the value of said utility function generating an interference effect matrix, which represents the mutual interferences of different bearers, and inverting the generated interference effect matrix in order to form new power levels.

A software code configured and stored in a processor readable medium, wherein the software code is configured to: communicate at least partly on a spread spectrum technique configured for either at least one mobile station or at least one base station, define at least one bearer as a communication entity between the at least one base station and the at least one mobile station, the at least one bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, form a control function at least partly on the basis of a quantity which at

least partly represents the control history experienced by the at least one bearer, calculate the control function in order to determine transmit power values to be used for at least one of said bearers, and determine the transmit power for more than one bearer when the transmission rate of the at least one bearer changes so that the control of said at least one of said bearers is arranged to impact the control of other bearers, generate an interference effect matrix which represents the mutual interferences of different bearers, and invert the generated interference effect matrix in order to form new power levels.

A base station comprising: a module configured to communicate at least partly on a spread spectrum technique for at least one mobile station and the base station, and wherein a bearer is defined as a communication entity between the base station and the at least one mobile station, the bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, a generator to generate a quantity which at least partly depends on the control history experienced by at least one bearer, a device to determine the output power values for more than one bearer at least partly on the basis of said quantity, a controller to control the transmit power of at least one bearer on the basis of said transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least one of the bearers is configured to impact to the control of other bearers, a generator to generate an interference effect matrix,

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which represents the mutual interferences of different bearers, and <u>an inverter to</u> invert the generated interference effect matrix in order to form new power levels.

A control unit comprising: a module configured to communicate at least partly on a spread spectrum technique for at least one mobile station and at least one base station, and wherein a bearer is defined as a communication entity between the at least one base station and the at least one mobile station, the bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, a generator to generate a quantity which at least partly depends on the control history experienced by at least one bearer, a device to determine the output power values for more than one bearer at least partly on the basis of said quantity, a controller to control the transmit power of at least one bearer on the basis of said transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least one of the bearers is configured to impact the control of other bearers, a generator to generate an interference effect matrix, which represents the mutual interferences of different bearers, and an inverter to invert the generated interference effect matrix in order to form new power levels.

A power control method comprising: defining at least one bearer as a communication entity between at least one base station and at least one mobile station, wherein the at least one base station or the at least one mobile station is configured to communicate at least partly on a spread spectrum technique, the at least one bearer

including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, forming a control function at least partly on the basis of a quantity which at least partly represents the control history experienced by the at least one bearer, calculating the control function in order to determine transmit power values to be used for at least one of said bearers, determining the transmit power for more than one bearer when the transmission rate of the at least one bearer changes so that the control of said at least one of said bearers is arranged to impact the control of other bearers, generating an interference effect matrix, which represents the mutual interferences of different bearers, and <u>inverting the generated interference effect</u> matrix in order to form new power levels.

An element comprising: a module configured to define at least one bearer as a communication entity between at least one base station and at least one mobile station, wherein the at least one base station or the at least one mobile station is configured to communicate at least partly on a spread spectrum technique, the at least one bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, a generator to generate a quantity which at least partly depends on the control history experienced by at least one bearer, a device to determine the output power values for more than one bearer at least partly on the basis of said quantity, a controller to control the transmit power of at least one bearer on the basis of said transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least

one of the bearers is configured to impact the control of other bearers, a generator to generate an interference effect matrix, which represents the mutual interferences of different bearers, and <u>an inverter to invert the generated interference effect matrix in order to form new power levels</u>.

A base station comprising: means for communicating at least partly on a spread spectrum technique for at least one mobile station and the base station, and wherein a bearer is defined as a communication entity between the base station and the at least one mobile station, the bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, means for generating a quantity which at least partly depends on the control history experienced by at least one bearer, means for determining the output power values for more than one bearer at least partly on the basis of said quantity, means for controlling the transmit power of at least one bearer on the basis of said transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least one of the bearers is configured to impact the control of other bearers means for generating an interference effect matrix, which represents the mutual interferences of different bearers, and means for inverting the generated interference effect matrix in order to form new power levels.

A control unit comprising: means for communicating at least partly on a spread spectrum technique for at least one mobile station and at least one base station, and wherein a bearer is defined as a communication entity between the at least one base

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station and the at least one mobile station, the bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, means for generating a quantity which at least partly depends on the control history experienced by at least one bearer, means for determining the output power values for more than one bearer at least partly on the basis of said quantity, means for controlling the transmit power of at least one bearer on the basis of said transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least one of the bearers is configured to impact the control of other bearers, means for generating an interference effect matrix, which represents the mutual interferences of different bearers, and means for inverting the generated interference effect matrix in order to form new power levels.

An element comprising: means for communicating at least partly on a spread spectrum technique either for at least one mobile station or at least one base station, and wherein a bearer is defined as a communication entity between the at least one base station and the at least one mobile station, the bearer including variable factors containing transmission rate, delay, bit error rate and having an impact on the communication, means for generating a quantity which at least partly depends on the control history experienced by at least one bearer, means for determining the output power values for more than one bearer at least partly on the basis of said quantity, means for controlling the transmit power of at least one bearer on the basis of said

transmit power values, said controller being so configured that when the transmit power of more than one bearer is configured to be determined when the transmission rate of at least one bearer changes, the controller to control the at least one of the bearers is configured to impact the control of other bearers, means for generating an interference effect matrix, which represents the mutual interferences of different bearers, and means for inverting the generated interference effect matrix in order to form new power levels.

The prior art of record fails to teach or render obvious the above underlined and bolded limitations therefore Claims 19 - 23, 25, 27, 30 - 32 and their corresponding dependent claims are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND S. DEAN whose telephone number is (571)272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond S Dean/ Examiner, Art Unit 2618 Raymond S. Dean May 19, 2009